

IN THE CLAIMS:

Please amend claims 1 and 10 as follows.

1. (Currently Amended) A hydrogen gas generator for generating hydrogen from a source fuel of the hydrocarbon family, oxygen, and steam,

said hydrogen gas generator comprising:

a fuel reformer with a catalyst which exhibits an activity to a partial oxidation reaction of said source fuel; and

a shift reactor which reduces by a water gas shift reaction a CO concentration of a gas supplied from the fuel reformer,

wherein said source fuel, oxygen, and steam are supplied to said reformer so that, within said fuel reformer, said partial oxidation reaction occurs on said catalyst and a water gas shift reaction occurs in which CO produced in said partial oxidation reaction is a reactant,

the O₂/C ratio, which is the ratio of the number of moles of said oxygen to the number of moles of carbon of said source fuel, is not less than 0.9 times the O₂/C theoretical mixture ratio in said partial oxidation reaction,

the H₂O/C ratio, which is the ratio of the number of moles of said steam to the number of moles of carbon of said source fuel, is not less than 0.5,

said water gas shift reaction is controlled such that the CO₂/CO ratio, which is the ration ratio of CO₂ to CO in an outlet gas of said fuel reformer, is not less than 0.2 and

the outlet gas temperature of said fuel reformer is not more than 800 degrees centigrade.

2. (Canceled)

3. (Canceled)

4. (Previously Presented) The hydrogen gas generator of claim 1, wherein the H₂O/C ratio is not more than 3.

5. (Canceled)

6. (Canceled)

7. (Previously Presented) The hydrogen gas generator of claim 1, wherein the supply rate of source fuel and oxygen to said fuel reformer is set such that the O₂/C ratio, which is the ratio of the number of moles of said oxygen to the number of moles of carbon of said source fuel, is greater than said O₂/C theoretical mixture ratio in said partial oxidation reaction.

8. (Previously Presented) The hydrogen gas generator of claim 1, wherein said O₂/C is not more than 1.5 times said O₂/C theoretical mixture ratio.

9. (Canceled)

10. (Currently Amended) A hydrogen gas generator for generating hydrogen from a source fuel of the hydrocarbon family, oxygen, and steam,

said hydrogen gas generator comprising:

a fuel reformer with a catalyst which exhibits an activity to a partial oxidation reaction of said source fuel; and

a shift reactor which reduces by a water gas shift reaction a CO concentration of a gas supplied from the fuel reformer,

wherein the supply rate of source fuel, oxygen, and steam to said fuel reformer is set such that the O₂/C ratio, which is the ratio of the number of moles of said oxygen to the number of moles of carbon of said source fuel, is not less than 0.9 times but not more than 1.5 times the O₂/C theoretical mixture ratio in said partial oxidation, and that the H₂O/C ratio, which is the ratio of the number of moles of said steam to the number of said source fuel

carbon moles, is not less than 0.5 but not more than 3, whereby, within said fuel reformer, said partial oxidation reaction occurs on said catalyst and a water gas shift reaction occurs in which CO produced in said partial oxidation reaction is a reactant;

wherein said water gas shift reaction is controlled such that the CO₂/CO ratio, which is the ratio of CO₂ to CO in an outlet gas of said fuel reformer, is not less than 0.2; and

wherein the temperature of said outlet gas of said fuel reformer is not more than 800 degrees centigrade.

11. (Previously Presented) The hydrogen gas generator of claim 1, wherein an active site of said catalyst is formed of at least one of rhodium and ruthenium.

12. (Previously Presented) The hydrogen gas generator of claim 11, wherein said catalyst is supported on a honeycomb monolith carrier.

13. (Previously Presented) A fuel cell system comprising:
a hydrogen gas generator of any one of claims 1, 4, 7, 8, 10, 11 and 12; and
a fuel cell capable of generating electricity by making use of hydrogen produced by said hydrogen gas generator as a fuel.

14. (Previously Presented) The fuel cell system of claim 13 further comprising:

discharged gas supply means for supplying a steam-containing gas, discharged from an oxygen electrode of said fuel cell, to said fuel reformer for a supply of steam to said fuel reformer.

15. (Previously Presented) The fuel cell system of claim 13 further comprising:

output current control means for controlling the output current of said fuel cell so that the oxygen concentration and the steam concentration of a discharged gas that is supplied to said fuel reformer fall within their respective given ranges.

16. (Original) The fuel cell system of claim 13 further comprising:
output current control means for controlling the output current of said fuel cell so that the coefficient of utilization of oxygen of said fuel cell ranges from 0.4 to 0.75.

17. (Previously Presented) The fuel cell system of claim 13 further comprising:

air supply means for a supply of air to said fuel reformer.